

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA)
v.) Criminal No. 19-369
LAFON ELLIS)

**DEFENDANT'S RESPONSE TO GOVERNMENT'S MOTION TO QUASH RULE 17
SUBPOENA SENT TO CYBERGENETICS.**

Introduction/Background

1. At issue is the propriety of the Mr. Ellis's Rule 17(c) subpoena *duces tecum* to Cybergenetics in an effort to get software verification and validation materials which are relevant, admissible, and specific for a forthcoming motion exclude TrueAllele results.
 2. Cybergenetics is a privately owned, for-profit, software company in the business of marketing a piece of probabilistic genotyping software called TrueAllele. That software purports to interpret DNA mixtures that are too complex and ambiguous for human DNA analysts to resolve. Probabilistic genotyping software, like TrueAllele, uses "biological modeling, statistical theory, computer algorithms, and probability distributions" to analyze complex DNA samples. Sci. Working Grp. on DNA Analysis Methods, *Guidelines for the Validation of Probabilistic Genotyping Systems* (2015), <http://perma.cc/EZ85-22VE>.
 3. Probabilistic genotyping is a novel, highly criticized, evolving technology for interpreting complex DNA mixtures. TrueAllele relies on a what the company considers to be a proprietary blend of variables, data, and formulas, and analysis of which peaks are "real" genetic material, to generate a so-called "likelihood ratio" ("LR"). An LR compares two hypotheses—the likelihood of seeing the evidence given the hypothesis that a suspect is a contributor to the sample, and the likelihood of seeing the evidence given the competing hypothesis that a suspect is not a contributor

to the sample. For example, an LR could indicate that “the profiles found in the DNA mixture are 10 trillion times more likely if the suspect is a contributor than if he is not a contributor.” The lack of scientific validity of TrueAllele’s reported LR is the subject of a forthcoming *Daubert* motion.

4. This court plays a “gatekeeping” role when it comes to expert testimony, “ensur[ing] that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993). Expert testimony is inadmissible unless it is the “product of reliable principles and methods.” Fed. R. Evid. 702(c). Put differently, an ostensibly scientific method like TrueAllele’s algorithm for generating LRs is inadmissible unless it is foundationally valid. *Daubert*, 509 U.S. at 593 (construing Fed. R. Evid. 702). *Daubert* looked to literature on the scientific method to offer non-exhaustive factors a trial judge might consider in determining foundational validity, including: whether the scientific theory can and has been *tested*, whether it has been subjected to *peer review and publication*, the known or potential *error rate*, whether the method is *generally accepted* in the relevant scientific community, and whether there are *standards* that control operation and were used in the case at hand. See *Daubert*, 509 U.S. at 593–94.

5. Cybergenetics is not a laboratory, nor a forensic laboratory, nor a crime lab.

6. As a result, Cybergenetics is not subject to any national or international rigorous forensic laboratory standards for the forensic work they sell, nor do they follow standards required in the relevant fields.

7. Accredited forensics laboratories are regularly audited to maintain accredited status. Those audits are conducted by independent parties that make sure the laboratories are complying with external standards and the laboratories’ own standard operating procedures.

8. But because it is not a forensic laboratory, Cybergenetics is not subject to any external oversight or auditing. There is no legal or other requirement that it be subject to audits of its work.

9. Cybergenetics is a software company, in the for-profit business of analyzing DNA and selling its program for forensic use.

10. Like forensic laboratories, software engineering has industry standards that apply to software development, including that of probabilistic genotyping software.

11. The President's Council of Advisors on Science and Technology [PCAST] Report from 2016 presented concerns about the scientific validity of probabilistic genotyping because it has not been subjected to the sorts of scientific testing that would be appropriate in their estimation. *See PCAST, Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* 75–83 (2016), <https://perma.cc/8DB8-Y6M6>.

12. The Defense's expert, Nathaniel Adams—a recognized expert on probabilistic genotyping software in state and federal courts in the United States and internationally in Australia and Canada—explains that “[t]hree forensic DNA organizations have issued guidance for the validation of probabilistic genotyping software: the United States Scientific Working Group on DNA Analysis Methods (SWGDAM) in 2015; the International Society for Forensic Genetics (ISFG) in 2016; and the United Kingdom Forensic Science Regulator (FSR) in 2018. ISFG states, ‘International industry standards apply to software validation, verification and test documentation. These standards can be simplified and extrapolated to forensic genetics.’ ISFG’s guidance cites the Institute of Electrical and Electronics Engineers (IEEE) Standard 1012-2012, *Standard for System and Software Verification and Validation*¹ as an example of a relevant existing software

¹ Inst. of Elec. & Electronics Eng’rs, *IEEE Std. 1012-2012: IEEE Standard for System and Software Verification and Validation* (2012).

standard.” *See* Decl. of Nathaniel Adams, attached at Exhibit 1. These bodies recommend that, among other things, probabilistic genotyping software be internally verified and validated prior to use, with ISFG and FSR pointing specifically toward software engineering conceptions and standards for verification and validation.

13. Cybergenetics does not claim to subscribe to existing general standards for forensic casework or software development.

14. Cybergenetics has not published any verification and validation studies to demonstrate that TrueAllele meets the requirements of software validation of probabilistic genotyping software. Cybergenetics does not claim to have, nor has provided documentation indicating that it has, constructed, verified, or validated TrueAllele in accordance with any software engineering standard document, either internal or external to Cybergenetics. *See* Exhibit 1, ¶ 9. There is no external auditing of the software development process and the software itself, according to Cybergenetics, is a proprietary trade secret. Thus, it is not clear whether Cybergenetics has complied with any software standards.

15. Mr. Adams writes, “[t]here is very little information publicly available about the development of the TrueAllele® software, including materials requested in the subpoena such as software engineering documentation or the source code.” *See* Exhibit 1 ¶ 8.

16. Because the person who possessed the gun in this case was not apprehended at the scene, and because regular DNA testing failed to connect Mr. Ellis to any of the evidentiary materials in this case, including the gun, the government intends to rely on TrueAllele in order to prove that Mr. Ellis is guilty of illegal gun possession.

17. On February 14, 2020, receipt of Rule 16 material was signed. *See* Doc. No. 11.

18. On April 10, 2020, undersigned counsel, in accordance with local rules, sent a 12-page discovery letter to the government seeking additional discoverable materials not previously disclosed via email. The majority of the information requested concerned information to test the reliability of TrueAllele by requesting software verification materials in ¶¶ 5-6 of the amended subpoena to Cybergenetics.

19. On April 17, 2020, the government, via email, indicated that it did not intend to respond to the letter, but that the government's file is open in this case, and counsel was free to come over and review it. The government added, however, that it thought that it had already sent over everything.

20. On April 28, 2020, undersigned counsel, via email, wrote, "If you have an 'open file' as you stated, please provide me with the discovery information requested in my letter." Within that same email, undersigned counsel requested additional discovery materials related specifically to TrueAllele. The government responded writing, "My file remains open for your review." Undersigned counsel emailed back by providing two different methods of sharing discovery via cloud-based services. The government responded, via email, "I do not intend to send you anything because, as I have already told you, I believe that I have sent you everything from my file. But, I will make my file available for your review."

21. On April 29, 2020, the Defense filed an *ex parte* sealed Rule 17(c) subpoena *duces tecum* requesting documents from Cybergenetics, the company that developed the TrueAllele software. On April 30, 2020, this Court granted the request issuing a Sealed Order. *See* Doc. No. 36.

22. On May 5, 2020, the Defense sent an email to Cybergenetics attempting to serve the subpoena. Service was attempted by email and fax due to Covid-19.

23. On May 6, 2020, the government made a subsequent production of Rule 16 evidence relating to TrueAllele. Despite this new production, the following materials, which are items requested in the subpoena sent to Cybergeneitics at Doc. No. 36², are **still outstanding**:

- A. Software development and operating materials, including but not limited to:
 - 1. Requirements specifications
 - 2. Design descriptions
 - 3. Source code, including dependency and build instructions and scripts
 - 4. The server-side database and executable computing components
 - 5. All version control system history (e.g. git or SVN)
 - 6. No formal software testing plans, records, or reports have been provided.

It's important to differentiate formal software testing documentation from vague claims that TrueAllele "has been tested."
 - 7. Issue and bug tracking, including issue reports and change requests
 - 8. Internal and external communications regarding development plans, processes, or requests
 - 9. Change logs
 - 10. Only some Operating manuals, plans, and procedures were provided, we are requesting all.
 - 11. Proficiency tests, including responses, used by personnel involved in validation processes or the instant case
 - 12. Verification and validation plans and reports
 - 13. Qualification and user testing plans and reports, the only validation studies provided were written as articles or reports by Cybergeneitics or client labs.
 - 14. Internal software development, quality assurance, and quality control processes, plans, and reports
- B. Records and electronic data used or generated by TrueAllele during validation study efforts, and any extant summaries thereof, have only been partially provided. One set of electronic data files has been provided, though records and

² Amended Subpoena to Cybergeneitics, attached as Exhibit 2.

- electronic data files underlying dozens of studies/reports have not been provided.
- C. Products of validation study efforts, including proposals, notes, memos, reports, graphics, tables, summaries, conclusions, and any resulting publications, presentations, and reports have been partially provided, mostly by way of complied reports and articles.
 - D. Biological testing case file was not provided.
 - E. Chain of custody and current disposition of evidence was not provided.
 - F. Data files created in the course of performing DNA testing and analyzing data was not provided.
 - G. Unexpected results and corrective actions reports were not provided.
 - H. Job descriptions of Cybergenetics personnel and proficiency test results were not provided.
 - I. Verification results were not provided.
 - J. Summary of bases relied upon by TrueAllele were not provided.
 - K. Written reports relied upon by TrueAllele and person operating TrueAllele were not provided.
 - L. Features and limitations of probabilistic genotyping program (TrueAllele) and the impact that those items will have on the validation process
 - M. All validation studies documented by the lab in accordance with the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories.
 - N. Proof of appropriate security protection to ensure only authorized users can access the software and data. List of names who accessed the data.

* * *

- 24. Cybergenetics is an independent non-government entity, and not a party to this case.
- 25. The government has filed a motion to quash the subpoena. *See* Doc. No. 47. In that motion, they threw everything including the kitchen sink³ to champion the cause of Cybergenetics. While

³ This expression was identified by Eric Partridge in his Dictionary of Forces' Slang (1948) as being used in the context of an intense bombardment in which the enemy fired everything they

the Defense would concede to modifying parts of its subpoena to Cybergenetics,⁴ the vast majority of the government's arguments are unavailing. For the reasons explained in this response, the government's motion to quash should be denied.

I. The moving party has a high burden to establish that the subpoena should be quashed because it is “unreasonable or oppressive.”

According to the rule, “the court may quash or modify the subpoena if compliance would be unreasonable or oppressive.” Fed. R. Crim. P. 17(c)(2). Interpreting this rule, the Supreme Court held, “[a] subpoena for documents **may be quashed if their production would be ‘unreasonable or oppressive,’ but not otherwise.**” *United States v. Nixon*, 418 U.S. 683, 698 (1974) (emphasis added). “The moving party has the burden of proof to demonstrate that compliance with the subpoena would be ‘unreasonable and oppressive.’” *Wiwa v. Royal Dutch Petroleum Co.*, 392 F.3d 812, 818 (5th Cir. 2004); *see also United States v. R. Enters.*, 498 U.S. 292, 306 (1991) (Stevens, J. concurring) (applying general rule in criminal case that burden of proof lies on party asserting affirmative of proposition). This burden is not trivial. *See In re Actiq Sales and Mktg. Practices Litig.*, 07-CV-4492 PBT, 2011 WL 5509434, at *2 (W.D. Pa. Nov. 10, 2011) (J. Conti) (“A party seeking to quash a subpoena bears a heavy burden of proof.”); *In re Grand Jury Proceedings*, 914 F.2d 1372, 1374 (9th Cir. 1990) (party bears “heavy burden” when he seeks to quash subpoenas);

had except the kitchen sink (or including the kitchen sink). *See* <https://idioms.thefreedictionary.com/everything+but+the+kitchen+sink>.

⁴ The Defense agrees to modify the subpoena the following ways:

1. Exclude statements of witnesses or prospective witnesses.
2. Strike the two-week disclosure requirement, and give Cybergenetics four weeks to produce records requested.
3. Instead of producing the materials to the defense, the materials shall be produced to the Court, which has discretion to allow the parties to inspect the materials.
4. Modify the subpoena to only include items still outstanding which are listed in ¶ 23 of this response to the motion.

In re Grand Jury Investigation, 610 F.2d 202, 219 (5th Cir. 1980) (describing burden as “heavy”); *Windsor v. Martindale*, 175 F.R.D. 665, 668 (D. Colo. 1997) (“Absent a specific showing of a privilege or privacy, a court cannot quash a subpoena *duces tecum*.”) (emphasis added)). Here, the government has failed to meet their “heavy burden” to demonstrate that the subpoena is “unreasonable or oppressive.” The government’s arguments are unavailing, fail to cite widespread agreement on the issues argued and the majority of their case law citations are one-liners missing case context and specific fact analysis. The government’s arguments are dealt with below.

II. The government’s motion to quash the subpoena must be denied because the government lacks standing.

This Court must first determine whether the government has standing to seek to quash the subpoena. Despite flagging the government’s lack of standing in Defense’s response to the Motion to Unseal, Doc. No. 45,⁵ the government in Doc. No. 47 (“Motion to Quash Subpoena”), failed to demonstrate, let alone attempt to justify why they have standing. Standing is required, and the government’s lack of standing is a valid basis to deny the motion—a conclusion supported by many decisions.⁶

⁵ See Doc. No. 45, at 4 stating, “[t]o the extent that the government’s request for the subpoena motion signals its intent to challenge the issuance of the subpoena by filing a motion to quash, it is not clear the government has the requisite standing to do so.”

⁶ See, e.g., *Beckford*, 964 F. Supp. at 1023 (“In many instances, the opposing party in a criminal case will lack standing to challenge a subpoena issued to a third party because of the absence of a claim of privilege, or the absence of a proprietary interest in the subpoenaed material or of some other interest in the subpoenaed documents.”); *United States v. Nachamie*, 91 F. Supp. 2d 552, 558 (S.D.N.Y. 2000) (“A party generally lacks standing to challenge a subpoena issued to a third party absent a claim of privilege or a proprietary interest in the subpoenaed matter.”); see also *Reyes*, 162 F.R.D. at 470 (citing, *Langford v. Chrysler Motors Corp.*, 513 F.2d 1121 (2d Cir. 1975) (absent claim of privilege, party usually has no standing to object to subpoena directed at non-party); *In re Grand Jury Subpoena Duces Tecum Dated May 9, 1990*, 741 F. Supp. 1059, 1060 n.1 (S.D.N.Y. 1990) (same), *aff’d*, 956 F.2d 1160 (2d Cir. 1992); *Ponsford v. United States*, 771 F.2d 1305, 1308 (9th Cir. 1985) (absent proprietary interest in documents sought, no standing to quash)); *Tomison*, 969 F. Supp. at 596 (“A party only has standing to move to quash the subpoena issued to another when the subpoena infringes upon the movant’s legitimate interests.”); *id.*

Cybergenetics is a privately owned, for-profit, software company in the business of marketing a software called TrueAllele. Cybergenetics is a non-party. The government has elected to champion the cause of Cybergenetics, but lacks standing because the government does not have a propriety interest, claim of privilege, or personal right in the materials subpoenaed from Cybergenetics. The government has insisted it has disclosed all of the requested material that is in their possession, custody, or control. So Mr. Ellis sought the same information pursuant to the amended subpoena directly from the company that should have it. The government cannot now assert arguments on behalf of a third party to attempt to block Mr. Ellis's access to relevant and material information for his defense. Notably, the government failed to even argue standing, nor can they persuasively. The analysis should end there, and the general rule that the government cannot quash a subpoena on behalf of a non-party should apply.

III. The government is not the right party to argue the existence of a trade secret and regardless, trade secrets are not an appropriate reason to quash the subpoena.

To convince the Court to not allow the Defense to access TrueAllele's source code, the government argues "trade secret" protection and "irreparable financial harm to the company." *See* Doc. No. 47 at 13-14. This argument is unavailing for several reasons. As an initial matter, it is not clear that the materials covered by the subpoena are truly protected by the trade secrets privilege and Cybergenetics—the holder of the privilege—has not appeared in court to advance or

(rejecting government's standing claim that the government is "in the best position to assist the court in ensuring that Rule 17(c) is not being improperly used as a discovery device" and explaining that "the contention does not demonstrate that the government has any of the interests required for a party to have standing to quash a subpoena"); *United States, v. Ocasio*, EP-11-CR-2728-KC, 2013 WL 12442496, at *4 (W.D. Tex. May 28, 2013) (finding that the government "does not have standing to object to the subpoenas" issued to third-party software company to produce the computer source code and documentation relating to a piece of software produced by that company.)

test this claim. The government's assertions are inadequate to establish trade secrets as a basis of non-disclosure.

And though the government states that the source code "has never been disclosed," *see* Doc. No. 47 at 3, it fails to mention that Cybergenetics has expressed a willingness to disclose the TrueAllele source code directly to its main competitor in ongoing patent litigation in the Northern District of Ohio under a protective order. *See* Stipulated Patent Protective Order ¶¶ 7(c)-(d), *Cybergenetics v. Inst. of Env'l. Sci. & Research*, No. 5:19-cv-1197-SL (N.D. Ohio Dec. 23, 2019), ECF No. 33. If Cybergenetics is willing to share its source code in hopes of financial gain and protecting its asserted patent rights, there is no reason it should not disclose the source code when Mr. Ellis's constitutional rights to confront the evidence against him and to due process of law are on the line.

Additionally, the trade secrets privilege stems from civil cases and is not clearly required to be applied in criminal cases, particularly where an accused person's rights would be interfered with if the information is withheld. *See* Rebecca Wexler, *Life, Liberty, and Trade Secrets* 70 Stan. L. Rev. 1343, 1377-78 (2018). Even if the trade secrets privilege is applied in this case—and, again, the holder of the asserted privilege has not established that it should be—"it is well settled that there is no absolute privilege for trade secrets . . ." 8A Wright & Miller, Fed. Prac. & Proc. Civ. § 2043; *see also Fed. Open Mkt. Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 (1979) (stating same). In civil cases, "the protection afforded is that . . . proper safeguards will attend disclosure." 8A Wright & Miller, Fed. Prac. & Proc. Civ. § 2043. Ultimately, none of the government's asserted trade secrets concerns would preclude production as this Court need only impose a protective order akin to those routinely employed in trade secret cases. Regardless of the privilege asserted, a protective order imposes sufficient safeguards to protect Cybergenetics

concerns, and no fact or argument presented by the government on behalf of Cybergenetics suggests otherwise.

Although the government does not have standing to object to the subpoena, the Defense proceeds to demonstrate the validity of the subpoena and will reply to the government's various other arguments in anticipation that they will be adopted by Cybergenetics. To that end, the Defense urges this Court to follow *United States, v. Ocasio*, EP-11-CR-2728-KC, 2013 WL 12442496, at *1 (W.D. Tex. May 28, 2013) as a case both helpful and analogous to the issues of first impression regarding a federal subpoena to request software verification and validation materials from Cybergenetics in federal court. That case involved a third-party software developer and a subpoena for the "computer source code and documentation relating to a piece of software" called "CPS" used in that case. *Id.* at *1. The government moved to quash, and the court rejected all three of the government's arguments. First, the court found that the "information sought is relevant, admissible, requested with adequate specificity, and sought in good faith." *Id.* at *5 (referencing *Nixon*, 418 U.S. at 699). The court found the source code "highly relevant," explaining that the "source code and documentation are relevant to resolving Mr. Ocasio's pending Motion to Suppress and determining whether or not the government's use of the CPS software constituted a Fourth Amendment violation." *Id.* at *5 (citing *United States v. Cisneros*, 456 F. Supp. 2d 826, 865 (S.D. Tex. 2006) ("Rule 17 governs the issuance of subpoenas in criminal cases. The rule is not limited to subpoenas for trial.")). It did so because the code and documentation was important to resolving a pending motion, it would be admissible under FRE 401 and 402, it was tailored using appropriate jargon from the relevant field, and Mr. Ocasio had previously sought the info from the government under Rule 16. *Ocasio*, 2013 WL 12442496, at *5. The court also found that the law enforcement privilege did not apply because the government had maintained

that it did not have “possession, custody or control” of the source code or documentation, which were in the hands of TLO. *Id.* at *6. The court found the request was made “in good faith and is not a fishing expedition,” particularly because Mr. Ocasio has previously sought the same materials from the government under Rule 16. *Id.* at *6. Lastly, the court concluded that “the government does not have standing to challenge the subpoenas,” because the government failed to assert a valid privilege or any “legitimate interest related to the materials that Mr. Ocasio seeks via his subpoenas.” *Id.*, at *4. In denying the government’s motion to quash, the court wrote, “the Court is not persuaded that even if the government had standing to object to subpoenas that quashing of the subpoenas is mandated by Rule 17.” *Ocasio*, 2013 WL 12442496, at *6.

IV. Contrary to the government’s assertions, the subpoena was properly issued and should not be quashed because the materials sought are relevant, admissible, and specific to the determination of whether TrueAllele results are admissible at Mr. Ellis’ trial.

A defendant’s right to subpoena documents to be produced is guaranteed by the compulsory process clause of the Sixth Amendment. U.S. Const. amend. VI, cl.3. As one court stated, “Rule 17(c) reflects the command of the Sixth Amendment that the full power and processes of the courts are available to defendants in criminal cases to help them defend against the charges brought by the Government.” *Beckford*, 964 F. Supp. at 1016. The right is codified and the procedures by which the subpoena may be obtained are set forth in Federal Rule of Criminal Procedure 17. Rule 17(c) provides for the issuance of subpoenas *duces tecum*:

A subpoena may order the witness to produce any books, papers, documents, data, or other objects the subpoena designates. The court may direct the witness to produce the designated items in court before trial or before they are to be offered in evidence. When the items arrive, the court may permit the parties and their attorneys to inspect all or part of them.

Fed. R. Crim. P. 17(c)(1).

The rule confers discretionary power to the courts to direct time of production, and also whether pre-trial inspection by the parties is warranted. *Id.* The rule also provides an opportunity for the holder of the subpoenaed documents to challenge a subpoena *duces tecum* by a motion to “quash or modify the subpoena if compliance would be unreasonable or oppressive.” Fed. R. Crim. P. 17(c)(2).

There are only two Supreme Court cases that have addressed Rule 17(c): *Bowman Dairy Co. v. United States*, 341 U.S. 214 (1951), in which the defense subpoenaed the government, and *United States v. Nixon*, 418 U.S. 683 (1974), in which the Watergate Special Prosecutor subpoenaed the President. Neither case involved a subpoena duces tecum to a third party.

In *Bowman Dairy*, the defendants were indicted for violating the Sherman Act. Prior to trial, the defendants moved (1) pursuant to Rule 16 for disclosure of all documents obtained from the defendants themselves or from anyone else pursuant to seizure or process, and (2) pursuant to Rule 17(c) for an order directing the government to produce all materials—other than materials protected by attorney client privilege or work product—that had been provided to the government by any other means. In connection with the second motion, defendants also served a subpoena duces tecum on the government, seeking the same documents referred to in that motion. *Bowman Dairy Co.*, 341 U.S. at 216-17. The government opposed the second motion and moved to quash the subpoena on the ground it would require disclosure of material that had been “furnished [to] the government by voluntary and confidential informants.” *Bowman Dairy Co.*, 341 U.S. at 218.

The *Bowman Dairy* Court held it was permissible for a criminal defendant to issue a Rule 17(c) subpoena to the government, but that because Rule 16 obligates the government to disclose certain material to the defendant, the defendant’s Rule 17(c) subpoena could not exceed the scope of Rule 16. See *Bowman Dairy Co.*, 341 U.S. at 220. The Court determined “Rule 17(c) was not

intended to provide an additional means of discovery.” *Bowman Dairy Co.*, 341 U.S. at 220. Instead, the Court explained that it provides a method “to expedite the trial by providing a time and place before trial for the inspection of subpoenaed materials.” *Id.* Further, the subpoenas could be used only to discover material that could be considered “evidentiary.” *Bowman Dairy Co.*, 341 U.S. at 219-20.

The *Bowman Dairy* Court suggested that Rule 17(c) could be used to gain access to Rule 16 materials that “are not put in evidence by the Government.” *Bowman Dairy Co.*, 341 U.S. at 219. “[T]he defendant may subpoena them under Rule 17(c) and use them himself. The *Bowman Dairy* Court wrote: “It would be strange indeed if the defendant discovered some evidence by the use of Rule 16 which the Government was not going to introduce and yet could not require its production under Rule 17.” *Id.* The Court also suggested that Rule 17(c) operated separately from Rule 16:

There may be documents and other materials in the possession of the Government not subject to Rule 16. No good reason appears to us why they may not be reached by subpoena under Rule 17(c) as long as they are evidentiary. That is not to say that the materials thus subpoenaed must actually be used in evidence. It is only required that a good-faith effort be made to obtain evidence.

Bowman Dairy Co., 341 U.S. at 219–20. Thus, Rule 17 operates independently from Rule 16, giving the defendant the right to obtain any “evidentiary” material. The breadth of the rule depends on what “evidentiary” means, and the Court was quick to make clear that it was to be narrowly construed:

It was not intended by Rule 16 to give a limited right to discovery, and then by Rule 17 to give a right of discovery in the broadest terms Rule 17(c) was not intended to provide an additional means of discovery. **Its chief innovation was to expedite the trial by providing a time and place before trial for the inspection of subpoenaed materials In short, any document or other materials, admissible as evidence, obtained by the Government by solicitation or voluntarily from third persons is subject to subpoena.**

Bowman Dairy Co., 341 U.S. at 220–21 (citation omitted) (emphasis added).

Twenty-three years after *Bowman Dairy* came *United States v. Nixon*, 418 U.S. 683 (1974).

There, upon a motion by the Special Prosecutor, the district court issued a subpoena pursuant to Rule 17(c) to the President, calling for the pretrial production of tape recordings, memoranda and transcripts relating to certain “precisely identified meetings between the President and others.” *Nixon*, 418 U.S. at 688. The President moved to quash the subpoena on three grounds, including that the Special Prosecutor had “failed to satisfy the requirements of” Rule 17(c). *Nixon*, 418 U.S. at 689. The motion was denied by the district court and the case went immediately to the Supreme Court, which affirmed the district court’s decision.⁷ The decision led to the four-factor *Nixon* test:

[I]n order to require production prior to trial, the moving party must show: (1) that the documents are evidentiary and relevant; (2) that they are not otherwise procurable reasonably in advance of trial by exercise of due diligence; (3) that the party cannot properly prepare for trial without such production and inspection in advance of trial and that the failure to obtain such inspection may tend unreasonably to delay the trial; and (4) that the application is made in good faith and is not intended as a general “fishing expedition.”

Nixon, 418 U.S. at 699-700. According to the Court, the party seeking to secure pre-trial document production under Rule 17(c) must show that the requested information is “relevant, admissible and specific.” *Nixon*, 418 U.S. at 700.

A. This Court should follow a materiality standard, or a more relaxed *Nixon* standard because the subpoenaed materials belong to a third party.

The Government offers the standard applicable to Government subpoenas set forth in *Nixon*, 418 U.S. at 698. See Doc. No. 47 at 6. The applicability of this standard to defense subpoenas remains unclear because the *Nixon* Court expressly left open one question of potentially great significance. In setting forth the first factor in the *Nixon* test—“that the documents are

⁷ President Nixon resigned approximately two weeks later.

evidentiary and relevant”—the Court noted, but did not resolve, the question whether the evidentiary requirement applies when the subpoena is issued to a non-party. *See Nixon*, 418 U.S. at 699 n.12. The Court said, in relevant part:

The Special Prosecutor suggests that the evidentiary requirement of *Bowman Dairy Co.* and *Iozia* does not apply in its full vigor when the subpoena *duces tecum* is issued to third parties rather than to the government prosecutors. We need not decide whether a lower standard exists because we are satisfied that the relevance and evidentiary nature of the subpoenaed tapes were sufficiently shown as a preliminary matter to warrant the District Court’s refusal to quash the subpoena.

Id. (internal citations omitted).

That the *Bowman/Nixon* standard applies to subpoenas issued by a defendant to the government does not mean that the same standard must apply to subpoenas issued by a defendant to non-parties. *Bowman Dairy* and *Nixon* neither covered nor considered the broad range of situations in which Rule 17(c) issues arise, including the one here, and the evidentiary standard that they impose should not apply to defendants’ subpoenas on non-parties. According to the treatise cited by the government, Wright & Miller, “**district courts have not applied the Nixon requirements as strictly when a defendant issues a subpoena to a third party as opposed to the government.**” 2 Fed. Prac. & Proc. Crim. § 275 (emphasis added).

Since *Nixon*, courts have held or suggested that the limitation does not apply when the subpoena is issued on behalf of a defendant upon a non-party. *See Nachamie*, 91 F. Supp. 2d at 552; *Tomison*, 969 F. Supp. at 593; *United States v. Stein*, 488 F. Supp. 2d 350, 99 (S.D.N.Y. 2007); *Tucker*, 249 F.R.D. at 58; *see also United States v. Nosal*, 291 F.R.D. 403 (N.D. Cal. 2013) (“[A]pplying a more relaxed standard to third party subpoenas will address the disparity between criminal and civil cases in access to discovery.”); Kenneth M. Miller, *Nixon May Have Been Wrong, but It Is Definitely Misunderstood (or, A Federal Criminal Defendant’s Pretrial Subpoenas Duces Tecum Properly Reaches Potentially Admissible Evidence)*, 51 Willamette L. Rev. 319,

322-23 (2015) (“A defendant need only establish that an identified item is potentially admissible into evidence to justify a Third Party Subpoena. The Court acknowledged this in *Nixon*, Justice Marshall stated this in *Burr*, and it makes sense if the goal is a fair trial. Once this element of the *Nixon* Standard is correctly understood and applied, then Rule 17(c) can serve its intended purpose.”).

In *Nachamie*, the court discussed whether the *Nixon* standard should be used for subpoenas directed at third parties, stating:

That high standard, of course, made sense in the context of a Government subpoena, especially one seeking evidence from the President . . . A real question remains as to whether it makes sense to require a defendant’s use of Rule 17(c) to obtain material from a non-party to meet this same standard. Unlike the government, the defendant has not had an earlier opportunity to obtain material by means of a grand jury subpoena. Because the rule states only that a court may quash a subpoena “if compliance would be unreasonable or oppressive,” the judicial gloss that the material sought must be evidentiary—defined as relevant, admissible and specific—may be inappropriate in the context of a defense subpoena of documents from third parties.

Nachamie, 91 F. Supp. at 562-63. *Nachamie* relied on *Tomison*, which involved a challenge to a defendant’s Rule 17(c) subpoena to a third party. The court in *Tomison* explained that “Rule 17(c) implements both the right to obtain the evidence and to require its production,” *Tomison*, 969 F. Supp. at 593 (citations omitted). Further, the court noted that in cases where the materials sought were “too massive for the defendant to adequately review unless obtained prior to trial, pre-trial production through Rule 17(c) is necessary to preserve the defendant’s constitutional right to obtain and effectively use such evidence at trial.” *Tomison*, 969 F. Supp. at 593 (citations omitted).

The *Tucker* court conducted a comprehensive analysis of Rule 17 and held the following:

Although I conclude that the standard annunciated in *Nixon* should not apply in the instant situation, the less-stringent standard I apply requires, as a threshold matter, the element of materiality. Under this standard, Rule 17(c) subpoenas are not to be used as broad discovery devices, but must be reasonably targeted to ensure the production of material evidence.

Tucker, 249 F.R.D. at 66. It is respectfully submitted that a materiality standard or a more relaxed *Nixon* standard reflects the more appropriate approach, and should govern this Court’s analysis in this case. Under that standard, there can be little question that the information requested is relevant and material to a determination of whether TrueAllele is admissible. Specifically, the information sought in ¶¶ 5-6 of the amended subpoena to Cybergenetics, *see* Doc. No. 35, are materials relevant to a determination of whether there are any software/technology issues based on the leading industry standards for probabilistic genotyping. The need for, and materiality of the materials subpoenaed are further explained below, and are taken from Defense Expert Nathan Adams’ Declaration to this Court. *See* Mr. Adams’s Declaration attached as Exhibit 1.

B. Even under the *Nixon* standard, the pre-trial subpoena *duces tecum* was properly issued because the materials requested in ¶¶ 5-6 of the amended subpoena are “relevant, admissible and specific.”

In this case, this Court need not hesitate in ruling that the information and documents sought through the subpoena is appropriate, as the outcome is no different even under the *Nixon* standard. “A subpoena for documents may be quashed if their production would be ‘unreasonable or oppressive,’ **but not otherwise.**” *Nixon*, 418 U.S. at 698 (emphasis added).

Here, the materials sought in the subpoena are admissible because they are relevant to the determination of the forthcoming *Daubert* motion and have a “tendency to make a fact more or less probable than it would be without the evidence.” Fed. R. Evid. 401. The facts at issue being, among other things, that the software makes appropriate assumptions and that it was developed in a way that makes it scientifically valid and reliable (or not).

The *Nixon* factors are discussed below:

[1] Relevant and evidentiary. “Rule 17 is not limited to subpoenas for the trial.” Wright & Miller, 2 Fed. Prac. & Proc. Crim. § 272. A subpoena may be issued “for determination of an issue of fact raised by a pre-trial motion.” *Id.*

In this case, the Defense is contesting the admissibility of a report authored by Cybergeneitics and testimony based on it. The report links Mr. Ellis’ DNA to a gun. The link is in the form of a likelihood ratio, calculated by the TrueAllele software program. Forensic data originally tested at the Allegheny County Forensic Laboratory provided “inconclusive” results linking Mr. Ellis’ DNA to the gun. In an attempt to link Mr. Ellis’ DNA to the gun, the Commonwealth of Pennsylvania, sent the data to Cybergeneitics. Cybergeneitics ran this data through their software program, and generated a report. The government wants to admit the software’s findings. The Defense believes that this software ought to be subject to a *Daubert* analysis. Thus, the issue of fact for this Court to consider is whether the software’s purported conclusion is admissible and whether or not it is constitutionally infirm.

The verification and validation materials in ¶¶ 5-6 of the amended subpoena are evidentiary and admissible under various rules of evidence.

First, they are admissible under Fed. R. Evid. 102. Rule 102 guides this Court’s decision-making when dealing with evidence stating that “[t]hese rules should be construed so as to administer every proceeding fairly, eliminate unjustifiable expense and delay, and promote the development of evidence law, to the end of ascertaining the truth and securing a just determination.” If the government wants to admit TrueAllele’s results, it should in all fairness allow Mr. Ellis’ expert to examine the software to determine whether industry standards are met and to test its reliability. Keeping the source code a secret will not help with “ascertaining the truth and securing a just determination.” Fed. R. Evid. 102.

Second, the materials are admissible under Fed. R. Evid. 702. Rule 702 requires a showing that before an expert's testimony is deemed admissible it must be "based on sufficient facts or data," the "product of reliable principles and methods," and the expert must have "reliably applied the principles and methods to the facts of the case." The materials subpoenaed are relevant and evidentiary because they have a tendency to make a fact more or less probable than it would be without the evidence, and its consequence to determine the validity of and admissibility of TrueAllele. This Court plays a "gatekeeping" role when it comes to expert testimony, "ensur[ing] that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Daubert*, 509 U.S. at 589. Expert testimony is inadmissible unless it is the "product of reliable principles and methods." Fed. R. Evid. 702(c). Put differently, an ostensibly scientific method like TrueAllele's algorithm for generating likelihood ratios is inadmissible unless it is foundationally valid. *Daubert*, 509 U.S. at 593. And the validity can only be scrutinized if the defense has access to the materials sought in the subpoena.

Third, the materials are admissible under Fed. R. Evid. 104 which states, "[t]he court must decide any preliminary question about whether . . . evidence is admissible. In so deciding, the court is not bound by evidence rules, except those on privilege." The Defense is contesting the admissibility of TrueAllele, which is a preliminary question for the court to determine. The materials requested are therefore admissible under Rule 104 and the "court is not bound by evidence rules." Fed. R. Evid. 104.

Fourth, the evidence is relevant under Fed. R. Evid. 401-402. In ruling that "there is little doubt" that the software source code and documentation were admissible, the *Ocasio* Court relied on Federal Rules of Evidence 401 and 402 to justify evidentiary value because the source code had a tendency "to make it more or less probable that the government's use of the CPS software

violated the Fourth Amendment.” *Ocasio*, 2013 WL 12442496, at *5. Likewise here, the requested software verification and validation materials are relevant to the determination of the forthcoming *Daubert* motion and have a “tendency to make a fact more or less probable than it would be without the evidence.” The facts at issue being, among other things, whether the software makes appropriate assumptions and whether or not it was developed in a way that makes it scientifically valid and reliable, which is “of consequence to the action.” Fed. R. Evid. 401. Thus, under Fed. R. Evid. 401-402, the materials are relevant for this Court to determine the admissibility of TrueAllele. *Daubert* set forth a non-exclusive checklist for trial courts to use in assessing the reliability of scientific expert testimony as discussed above. As discussed in Mr. Adam’s Declaration, *see Exhibit 1 ¶¶ 22-23, 33, 44*, the materials requested are necessary to evaluating the scientific validity of the evidence. Similar to the request made by the defendant in *Ocasio*, the specific items are specific because the subpoenaed materials used “precise terms of art.” *Ocasio*, 2013 WL 12442496, at *5.

Fifth, the materials are not hearsay because they are not being introduced to prove the truth of the matter asserted in them. Instead, they are being introduced to establish whether the materials exist before asking Mr. Adams to express his opinion about how code should be tested, whether the code actually does what TrueAllele says it does, and whether the documentation provided and the code itself are up to industry standards. Thus, they will be admissible to establish shortcomings or limitations of the software that are relevant to a challenge to admissibility and to the weight which a juror should ascribe to the results. Moreover, evidence rules are relaxed at *Daubert* hearing because they are preliminary matters. *See* Fed. R. Evid. 104.

Sixth, if the government wants to argue that the materials are hearsay, they would be admissible under numerous exceptions. *See* Fed. R. Evid. 803(1) (Present Sense Impression), Fed.

R. Evid. 803(6) (Records of a Regularly Conducted Activity.), Fed. R. Evid. 803(7) (Absence of a Record of a Regularly Conducted Activity), and Fed. R. Evid. 807 (Residual Exception). And lastly, the materials are admissible as general impeachment evidence.⁸

[2] Not otherwise procurable reasonably in advance of trial by exercise of due diligence. As outlined above, the defense requested these documents and data from the government prior to requesting the materials via subpoena. The government stated that it has turned everything over and refuses to produce other materials that remain outstanding.

The government argues that the subpoena should be quashed because the subpoena demands expert disclosures governed by Rule 16(a)(1)(G) and not Rule 17(c)(1). *See* Doc. No. 47 at 3-4. The government also claims that it has “of course fully complied with its Rule 16 obligations by providing the defendant with the relevant materials” arguing that “Rule 17(c) provides no basis for requiring the production of documents from the government’s expert that the government is not required to produce under Rule 16.” *See* Doc. No. 47 at 3.

⁸ When the production of the impeachment material is of a witness who is certain to testify at trial, courts have ordered the production of that material pre-trial. *See United States v. LaRouche Campaign*, 841 F.2d 1176, 1179 (1st Cir. 1988); *United States v. Shinderman*, 432 F. Supp. 2d 157, 160 (D. Me. 2006); *United States v. Libby*, 432 F. Supp. 2d 26, 42-43 (D.D.C. 2006) (pre-trial production of impeachment materials where witness would “inevitably” testify at trial); *United States v. Tucker*, 249 F.R.D. 58, 67 n.56 (S.D. N.Y. 2008), as amended, (Feb. 20, 2008) (pre-trial production of impeachment material concerning cooperating witnesses because “requiring [defendant] to wait until their testimony is complete to begin reviewing the recordings would result in an unreasonable delay”); *United States v. King*, 194 F.R.D. 569, 574 (E.D. Va. 2000) (if rationale for not allowing subpoena to garner materials to be used solely for impeachment is that the materials become evidentiary only when, and if, a witness testifies, then “[i]t follows, therefore, that where it is known with certainty before trial that the witness will be called to testify, the admissibility determination, within the meaning of Nixon, can be made before trial, and the statements properly may be considered evidentiary”); *United States v. Liddy*, 354 F. Supp. 208, 209-12 (D.D.C. 1972) (granting pre-trial motion for Rule 17(c) subpoena for impeachment materials related to testimony of “a key Government witness”); *see also United States v. Ball*, 1999 WL 974028 (D. Kan. 1999) (ordering production of subpoenaed materials where materials would be relevant and admissible as impeachment evidence if relevant witness testified, as was anticipated).

The government needs to make a choice. On one hand, they argue that they have met all their Rule 16 obligations and are not required to produce the requested materials. On the other hand, they argue that Rule 16 controls disclosure of the materials and thus the items cannot be subpoenaed. The government cannot have it both ways—either the materials are under their control and should be handed over in Rule 16 discovery forthwith, or they are not in the government’s control and can be obtained via the valid Rule 17 subpoena Mr. Ellis sought.

To the extent that the government is arguing that Rule 16 is the proper vehicle for discovery, the government is correct that Rule 16 sets forth the defendant’s right to discovery from the government. But, Rule 16 says nothing of the defendant’s right to discovery from other sources, and thus the argument that Rule 17(c) should not be used as an alternative means of seeking discovery *from the government* does not affect the propriety of seeking Rule 17(c) subpoenas directed to non-parties. As one court noted, “[t]he notion that because Rule 16 provides for discovery, Rule 17(c) has no role in the discovery of documents can, of course, only apply to documents in the government’s hands; accordingly, Rule 17(c) may well be a proper device for discovering documents in the hands of third parties.” *Tomison*, 969 F. Supp. at 593 n. 14; *see United States v. King*, 194 F.R.D. 569, 573 n.3 (E.D. Va. 2000) (noting that problem addressed in *Bowman Dairy* of potentially allowing Rule 17(c) to be used as discovery alternative to Rule 16 is not present where Rule 17(c) subpoena is issued by defendant to third-party). A rule other than Rule 16 serves as the vehicle to get evidence from third parties. “If this were not the case, the government could prevent defendants from obtaining material by choosing not to obtain it for itself. This perverse result cannot be intended by the Federal Rules of Criminal Procedure.” *United States v. Tucker*, 249 F.R.D. 58, 65 (S.D.N.Y. 2008), *as amended* (Feb. 20, 2008).

To the extent that the government is arguing that they are not required to give the documents, Rule 17 would be the proper vehicle to obtain them. The Sixth Circuit stated that Rule 16 only deals with documents within the government’s “possession, custody, or control.” *See United States v. Llanez Garcia*, 735 F.3d 483, 493 (6th Cir. 2013). The same court also wrote that Rule 17 “sweeps more broadly” and suggested that Rule 17 allows the defendant to obtain documents that the government does not have control over for Rule 16 purposes. *See Id.* Here, the documentation related to TrueAllele’s reliability if not in the possession, custody, or control of the government can be subpoenaed to obtain documents necessary for Mr. Ellis’ defense. If, however, the material is in the government’s possession, custody, or control, it should have been disclosed by now. Contrary to what the government writes, they have not met their discovery obligations under Rule 16 because production of the requested material is mandated under Rule 16(a)(1)(E), Rule 16(a)(1)(F), and Rule 16(a)(1)(G). Any deficiencies in TrueAllele’s software that might disprove the claim that Mr. Ellis’ DNA is on the gun, would be “material to preparing the defense,” Fed. R. Crim. P. 16(a)(1)(E)-(F), and thereby subject to disclosure by the government. Courts have held that “documents are considered part of the evidence in chief if they are marked and offered into evidence by the government or relied on or referred to in any way by the government’s witness.” *United States v. Jordan*, 316 F. 3d 1215, 1250 n. 75 (11th Cir. 2003). This ruling mandates discovery of at least the items the government says its experts are relying on or referring to in any way.⁹

⁹ *See also, United States v. Dioguardi*, 428 F.2d 1033, 1038 (2d Cir. 1970) (“We fully agree that the defendants were entitled to know what operations the computer had been instructed to perform and to have the precise instructions that had been given. **It is quite incomprehensible that the prosecution should tender a witness to state the results of a computer’s operations without having the program available for defense scrutiny and use on cross-examination if desired.** We place the Government on the clearest possible notice of its obligation to do this and also of the great desirability of making the program and other materials needed for cross-examination of

To the extent that this Court believes that Rule 16 does not direct production, this Court is empowered to order production as an appropriate exercise of its inherent authority. *See Degen v. United States*, 517 U.S. 820, 823-24 (1996) (holding courts “have certain inherent authority to protect their proceedings and judgments in the course of discharging their traditional responsibilities”).

[3] The party cannot properly prepare for trial without pre-trial production and inspection. The validity of TrueAllele is contested and the subject of a forthcoming challenge. The Court will not be able to fulfill its obligation to serve as a gatekeeper to this evidence without a full airing of the technical issues, which requires the Defense’s expert having access to information Cybergenetics does not want to disclose. The Defense from the onset of the case asked for the software verification and validation materials from the government. After not receiving them, Mr. Ellis sought the subpoena with plenty of time to allow its expert to examine the materials

computer witnesses, such as flow-charts used in the preparation of programs, available to the defense a reasonable time before trial.”) (emphasis added); *United States v. Green*, 144 F.R.D. 631, 639 (W.D.N.Y. 1994) (directing the government to turn over all scientific reports but also all findings, scientific or technical data upon which such reports are based); *United States v. Siegfried*, 2000 WL 988164 (N.D. Ill. 2000) (“[C]onsiderations of fundamental fairness require that the defense have access to material concerning the manner and means of testing so that it can make an independent determination of the tests’ reliability and have a fair opportunity to challenge the government’s evidence. The testing protocols may not be, strictly speaking, ‘results or reports’ of testing and thus may well not be covered by Rule 16(a)(1)(D). Even if not, however, the Court believes for the reasons stated that the protocols are ‘material to the preparation of the defense’ and are thus within the scope of Rule 16(a)(1)(C) even if they are outside the scope of Rule 16(a)(1)(D).”); *United States v. Liquid Sugars, Inc.*, 158 F.R.D. 466, 471-72 (E.D. Cal. 1994) (ordering production of a broad range of items, including chain of custody, laboratory bench sheets, testing procedures utilized, calibration standards utilized, laboratory preparation logs, identifying information for instruments and equipment utilized, and “other methodologies actually employed for the testing,” holding that “if the government plans to use the results of scientific tests as evidence, data and reports which directly underlie those results are generally important to an understanding of the evidence.”).

(which are relevant and material) to prevent a last-minute rush to do an examination its expert says will take several weeks. *See Exhibit 1 ¶¶ 38, 42.* As explained in Mr. Adams' declaration, the materials requested are based on standards promulgated by various bodies applicable to probabilistic genotyping software and software engineering. According to Mr. Adams, verification and validation "efforts evaluate conformance of the operations undertaken by TrueAllele® during its hours- or days-long calculations with the methods described in its articles, summaries, tutorials, and case-specific materials. Formalized, enumerated software requirement specifications for TrueAllele®, including methods for qualification testing the system against the requirements, are expected to be the most discrete, objective, and falsifiable descriptions of intended system operations. Through testing, comparison of the software requirement specifications to the human-readable computer instructions (source code), claims of conformance of the actual system to its intended and advertised behaviors can be evaluated." *See Exhibit 1 ¶ 31.*

While the government writes that the Defense has everything they need, the documents given to the Defense, which Mr. Adams analyzed, "do not demonstrate conformance to standardized V&V processes described in software engineering standards documents." *See Exhibit 1 ¶ 30.* The information is needed now so that the Defense can adequately prepare for the *Daubert* hearing in order to fully inform the Court on the issue in as timely and efficient a manner as possible. *See United States v. Cuthbertson*, 651 F.2d 189, 192 (3d Cir. 1981) (stating that it is not an abuse of discretion to order pretrial disclosure of materials under Rule 17(c)).

As stated above, the request seeks specific information needed to examine and assess the accuracy of the TrueAllele results and the methods by which the software analyzes DNA samples/produces a likelihood ratio. If voluminous scientific information needed for expert analysis is not produced prior to trial, delay would be inevitable. This Court should order it be

disclosed now because waiting until the hearing for which it's relevant (or worse, trial) will needlessly delay proceedings. As *Cuthbertson* said, it's not an abuse of discretion to order pre-trial disclosure and as Miller & Wright say, Rule 17 is not limited to subpoenas for trial. *See* 2 Fed. Prac. & Proc. Crim. § 275.

[4] That the application is made in good faith and is not intended as a general “fishing expedition.” Mr. Ellis stands accused of a serious felony which he could be imprisoned for a maximum period of 10 years. DNA evidence forms a significant part of the prosecution evidence to the extent that, if inadmissible or distrusted, a conviction would be very hard to obtain. The reliability, accuracy, and trustworthiness of the DNA results produced by TrueAllele software will be challenged in a pre-trial admissibility hearing and in jury trial. The records sought in this case relate directly to the potential shortcomings of the software because they seek information on instances where the software has failed to perform correctly, failed to perform as expected, or required changes to the code, or which will reveal the circumstances under which the results could be unreliable, inaccurate, imprecise, or otherwise problematic, or because they will describe other limitations of the software.

Software quality is best evaluated against objective descriptions with testable pass/fail criteria for measuring compliance with those descriptions. Various methods are used by software developers to ensure and evaluate this compliance, and industry and organizational standards documents set forth frameworks for the tasks that should be undertaken during software conceptualization, construction, maintenance, and use. According to Mr. Adams, “[t]hree forensic DNA organizations have issued guidance for the validation of probabilistic genotyping software: the United States Scientific Working Group on DNA Analysis Methods (SWGDAM) in 2015; the International Society for Forensic Genetics (ISFG) in 2016; and the United Kingdom Forensic

Science Regulator (FSR) in 2018. ISFG states, “International industry standards apply to software validation, verification and test documentation. These standards can be simplified and extrapolated to forensic genetics.” ISFG’s guidance cites the Institute of Electrical and Electronics Engineers (IEEE) Standard 1012-2012, *Standard for System and Software Verification and Validation*¹⁰ as an example of a relevant existing software standard.” *See Exhibit 1 ¶ 10.* These bodies recommend that, among other things, probabilistic genotyping software be internally verified and validated prior to use.

Rigorous independent testing is not merely a best practice for software like TrueAllele. The world’s leading computer science review community—IEEE—*requires* technically, managerially, and financially independent testing for any software where “catastrophic consequences” could result even occasionally. IEEE Standards Ass’n, *IEEE Std. 1012-2016: IEEE Standard for System, Software, and Hardware Verification and Validation* 196, 199 (2016); *see also* Nathaniel Adams, *What Does Software Engineering Have to Do with DNA?*, The Champion (May 2018) (discussing importance of subjecting probabilistic genotyping systems to software engineering best practices and independent reviews). The IEEE defines “catastrophic consequences” as “[l]oss of human life, complete mission failure, loss of system security and safety, or extensive financial or social loss.” *Id.* at 196. For such software, the IEEE requires that the developer be fully independent from the organization responsible for verifying and validating that the software operates as expected. *Id.* at 199. And DNA software used in criminal cases should be subjected to independent testing that is at least rigorous as banking software. *See Michael Coble et al., DNA Commission of the International Society for Forensic Genetics: Recommendations on*

¹⁰ Inst. of Elec. & Electronics Eng’rs, *IEEE Std. 1012-2012: IEEE Standard for System and Software Verification and Validation* (2012).

the Validation of Software Programs Performing Biostatistical Calculations for Forensic Genetics Applications, 25 *Forensic Sci. Int'l: Genetics* 191, 192–93 (2016), <http://perma.cc/M8R5-C3NL> (underscoring the importance of independent testing for every version and build of PG systems in policy recommendations of the International Society for Forensic Genetics).

Indeed, outside experts have stated that they cannot assess how a probabilistic genotyping system arrives at its answers without access to the source code to verify what the program does.

See Joe Palazzolo, *Defense Attorneys Demand Closer Look at Software Used to Detect Crime-Scene DNA*, *Wall St. J.* (Nov. 18, 2015), <https://on.wsj.com/2ONpnE3>. That is because the assumptions the software makes about how to weigh the information analysts put into the algorithm are buried in the source code that Cybergenetics will not share or subject TrueAllele to fully independent review. *See* Andrea Roth, *Trial by Machine*, 104 *Geo. L.J.* 1245, 1273-74 (2016) (discussing effect of shielding proprietary source code of TrueAllele).

Validation studies—which are designed to establish software or devices function as claimed—are insufficient to establish the accuracy of TrueAllele without simultaneous access to the source code because such studies examine only inputs and the outputs produced; they cannot assess *how* the machine turns those inputs into outputs. Natalie Ram, *Innovating Criminal Justice*, 112 *Nw. U. L. Rev.* 659, 688 (2018) (indicating that “reliance on validation studies in place of source code access, rather than alongside it, is likely insufficient to verify that software has performed as its designer claims”).

“The test for enforcement is whether the subpoena constitutes a good faith effort to obtain identified evidence rather than a general ‘fishing expedition’ that attempts to use the rule as a discovery device.” *United States v. Cuthbertson*, 630 F.2d 139, 144 (3d Cir. 1980) (citing *Bowman Dairy Co.*, 341 U.S. at 220-21; *United States v. Liddy*, 354 F. Supp. 208 (D.D.C.1972); *United*

States v. Wortman, 26 F.R.D. 183 (E.D. Ill. 1960)). “A subpoena that fails to describe any specific documents is too broad, but it is not necessary that the subpoena designate each particular paper desired. It is sufficient if kinds of documents are designated with reasonable particularity.” Wright & Miller, 2 Fed. Prac. & Proc. Crim. § 275.

Here, the request was made in good faith and is specific. The *Ocasio* court found a similar request was made “in good faith and is not a fishing expedition,” particularly because Mr. Ocasio has previously sought the same materials from the government under Rule 16. *Ocasio*, 2013 WL 12442496, at *6. Here, like *Ocasio*, the Defense made a good faith request to the government for the materials in the amended subpoena. Like in *Ocasio*, where the court found that the specificity requirement was met because the items in the subpoena used “precise terms of art,” *Ocasio*, 2013 WL 12442496, at *5, and here, the materials sought are specifically tailored using precise terms of art based on industry standards for evaluation and verification and validation of probabilistic genotyping software systems like TrueAllele. *See Exhibit 1 ¶¶ 22-24, 41*. As much as the government wants to argue it, the materials requested are not a “fishing expedition.” The government has already conceded that TrueAllele works based on source code, *see Doc. No. 47 at 12*, thus, the Defense is not merely hoping that it exists—we know it exists. *See United States v. Cuthbertson*, 630 F.2d 139, 146 (3d Cir. 1980) (“We do not think that this ‘mere hope’ justifies enforcement of a subpoena under rule 17(c)”). Thus, the Defense is not “fishing” for something that may exist or may not exist, we know it exists and we know who is in possession of it. The materials are necessary to review and reanalyze what was done in Mr. Ellis’ case. There is no transparency around how TrueAllele does what it purports to do, and the defense is entitled to investigate whether it actually does what it is designed to do. This Court should weary of a software company that purports to opine on the DNA match of a suspect’s DNA on a gun in her courtroom

without allowing the Defense to inspect its software to make sure it complies with industry standards. What is Cybergenetics hiding? Why are they asking the government to fight tooth and nail to prevent disclosure of industry standards for software verification and validation materials such as their source code? Professor Erin Murphy of N.Y.U. School of Law¹¹—a nationally recognized expert in forensic DNA typing whose work has been cited multiple times by the Supreme Court—has argued that obtaining the code itself is crucial in order to fully evaluate TrueAllele. She writes, “Just as courts would not accept opinions from witnesses not shown to have qualifications as an expert, so, too, should courts not accept opinions from digital ‘experts’ without probing the ‘qualifications’ of the technology.”¹²

V. Mr. Ellis’ responses to other government arguments.

A. Because Mr. Ellis is indigent, the government must pay for the costs of the subpoena.

The government argues that it is not responsible for paying the costs of the subpoenaed materials. Instead, the government puts that burden on the U.S. Marshal’s Office through the submission by the Defense of the appropriate forms, and claims that any additional costs be borne by the Public Defender’s Office. Lastly, the government argues that the request for the government to bear all costs of the subpoena is a reason to quash the subpoena. The government fails to cite any authority for their arguments. *See* Doc. No. 47 at 7. The government’s arguments are unavailing. In *United States. v. Florack*, 838 F. Supp. 77, 79 (W.D. N.Y. 1993), The court noted that “to conclude that Rules 17(a) and 17(c) permit an individual of financial means to subpoena both witnesses and documents without notice to the Government, while Rules 17(b) and 17(c) only

¹¹ Faculty Biography available at, <https://its.law.nyu.edu/facultyprofiles/index.cfm?fuseaction=profile.biography&personid=31567>

¹² Erin Murphy, *Inside The Cell: The Dark Side Of Forensic DNA* 299 (2015).

allow an indigent defendant to subpoena witnesses, would result in a disability based on financial status in violation of the Fifth Amendment.” *See also*, Wright & Miller, 2 Fed. Prac. & Proc. Crim. § 273 (stating that, *U.S. v. Florack* seems clearly right in construing Rule 17(b) as applying to a subpoena duces tecum as well as to a subpoena to testify); *see also Johnson v. Lamas*, No. 10-cv-5326, 2011 WL 2982692, at *3 (E.D. Pa. July 21, 2011) (citing *In re Pruett*, 133 F.3d 275, 277 (4th Cir. 1997)) (“Rule 17(b) of the Federal Rules of Criminal Procedure provides for the issuance and service of subpoenas at government expense upon an ex parte showing of the defendant’s financial need, and a finding that the subpoena is necessary for his defense.”).

Here, Mr. Ellis is indigent and therefore has shown financial need. As already explained above the materials are relevant to test the reliability and accuracy of TrueAllele. Lastly, this is again not a valid reason to quash a subpoena.

B. Contrary to the government’s arguments, *ex parte* applications for pretrial production of Rule 17(c) subpoenas are proper and contrary to the government’s argument, *ex parte* applications are not a proper basis to quash a subpoena.

The government argues that this Court should quash the subpoena because it was filed *ex parte* without justification. *See* Doc. No. 47 at 8. That is not a valid reason to quash a subpoena. *See Nixon*, 418 U.S. at 698 (subpoena may be quashed if “unreasonable or oppressive, but not otherwise). Filing something *ex parte* is neither unreasonable nor oppressive, and the government fails to demonstrate or explain how it is. Notably, they have failed to cite a case supportive of their interpretation of the law. Many courts have held a party may make an *ex parte* application for a pretrial subpoena duces tecum.¹³ Not only was it proper to file the application *ex parte*, but

¹³ *See e.g.*, *United States v. Daniels*, 95 F.Supp.2d 1160, 1162-63 (D. Kan. 2000); *United States v. Tomison*, 969 F.Supp. 587, 589-95 (E.D. Cal. 1997); *United States v. Beckford*, 964 F. Supp. 1010, 1029 (E.D. Va. 1997); *United States v. Vigil*, 10-cr-2310 JB, 2013 WL 3270995, at *8- 9 (D. N.M. June 3, 2013); *United States v. Sellers*, 275 F.R.D. 620, 625 (D. Nev. 2011); *United States v. Stewart*, 96-cr-583, 1997 WL 103700, at *2 (E.D. Pa. Mar. 4, 1997); *United States v. Reyes*, 162 F.R.D. 468, 470 (S.D.N.Y. 1995); Wright & Miller, *Production of Documentary Evidence and*

according to the government's own referenced legal treatise, Wright & Miller, the Defense had no duty to seek leave from this Court to serve Cybergenetics, as the subpoena did not request personal or confidential information about a victim. *See Wright & Miller, Production of Documentary Evidence and Objects—Trial Subpoenas*, 2 Fed. Prac. & Proc. Crim. § 275 (“Leave of court is not ordinarily required for issuance of a subpoena duces tecum, except for a subpoena to a third party for personal or confidential information about a victim.”); *see also United States v. Llanez-Garcia*, 735 F.3d 483, 499 (6th Cir. 2013) (“[N]either a plain-language reading of the rule’s text, nor a rendering of its purpose, nor a review of decisional law unequivocally supports a pre-issuance approval requirement.”).

Thus, *ex parte* applications for pretrial production of Rule 17(c) subpoenas are proper, are not a valid basis to quash the subpoena, and can be sought without seeking leave of the court when issued to a third-party except for personal or confidential information about a victim.

C. Contrary to what the government argues, it is not unrealistic to review and use the source code in preparation for Mr. Ellis’ defense.

In an attempt to argue the futility of gaining access to the source code, the government writes, “[r]eading at ten lines per hour would entail eight and a half person-years to review all the source code. It is therefore wholly unrealistic to expect that reading through TrueAllele source code would yield meaningful information.” *See* Doc. No. 47 at 12. The government continued by writing, “[i]t would be unrealistic for defense counsel to review and use this code in preparation of their defense.” *See* Doc. No. 47 at 13.

Objects—Trial Subpoenas, 2 Fed. Prac. & Proc. Crim. § 275 (4th ed.) (“[B]oth the government and a defendant may make an *ex parte* application for a pre-trial subpoena duces tecum.”); *see also United States v. Kravetz*, 706 F.3d 47, 53 n.4 (1st Cir. 2013) (“The text of Rule 17(c) does not expressly prohibit *ex parte* requests for subpoenas, and courts have found them to be permissible.”).

The government is correct that defense counsel will not be reviewing the source code because defense counsel, as the government wrote, is not “fluent in reading, writing and interpreting the particular language that the program is written in.” *See Doc. No. 47 at 13.* However, the Defense’s expert, Mr. Adams, is fluent. As part of his expertise on probabilistic genotyping software nationally and internationally, Mr. Adams is fluent in reading, writing, and interpreting source code similar to TrueAllele’s. He has “reviewed non-public software development materials, including source code, for probabilistic genotyping systems STRmix™ and FST used in criminal cases in state and federal courts in the United States and Australia.”

Exhibit 1 ¶¶ 4-5.

In response to the government’s argument that it would take eight and a half person-years to review all the source code, Mr. Adams wrote “[w]hile V&V of complex software systems involves reviews of source code and evaluating the extent of testing efforts, it does not involve reading the whole of a program’s source code straight-through or testing every individual function.” Exhibit 1 ¶ 38. He estimated that “an initial inventory of the TrueAllele® V&V-supportive materials that exist would take days to a few weeks, depending on how well-catalogued and centralized the materials are.” *See Exhibit 1 ¶ 42.* Mr. Adams continued writing,

A more in-depth review could take longer and could reveal additional information about expected rates of unidentified defects, identification of extant defects, specific system behaviors including undisclosed behaviors, extents of testing efforts, and many other topics. If thorough documentation from earlier V&V efforts exists, an audit of those efforts could take weeks. If standard V&V tasks were not conducted, if documentation was not preserved, or if documentation is outdated or not well-centralized, I can offer no practical upper bound to a time estimate for a review. At a minimum, **I would need 6-8 weeks to review and characterize a “worst-case scenario” for a program of the expected size and complexity of TrueAllele®.**

Id. at ¶ 43 (emphasis supplied).

D. Contrary to the government’s argument, there is a genuine controversy as to the validity and reliability of the TrueAllele method.

The government writes “there is no genuine controversy as to the validity and reliability of the TrueAllele method.” *See* Doc. No. 47 at 9. In direct response to this statement, Mr. Adams wrote in disagreement stating, TrueAllele® is a complex software system whose output required 40 days’ worth of computer time to compute in this case.¹⁴ Confidence in these outputs should derive from confidence in the operations executed by TrueAllele®. Confidence in the operation of any software is determined through assessments of its quality as a software system.” *See* Exhibit 1 ¶ 18. He then explained that software systems are assessed under “the banner of verification and validation (V&V).” *Id.* at ¶ 20. Instead of gaining confidence from the government’s baseless assertion that there is a genuine controversy to the validity and reliability of the method, this Court should look to assessments of its quality as a software system using industry specific standards.

Furthermore, in an attempt to convince this Court that validation and verification materials, including source code, are not necessary, the government writes, [o]ver thirty-five validation studies have been conducted by Cybergeneitics and other groups to establish the reliability of the TrueAllele method and software. Eight of these studies have been published in peer-reviewed scientific journals, for both laboratory-generated and casework DNA samples. Source code was not needed or used in any of these studies.” *See* Doc. No. 47 at 10. First, none of the “validation” and “peer-reviewed studies” analyzed whether TrueAllele meets standards of a reliable software system. “Some IEEE Std 1012 V&V material ‘inputs’ requested in paragraph 5 of the amended subpoena have not been mentioned in published articles about TrueAllele® or in the validation study summaries included on the TrueAllele® DVD provided in this case. These

¹⁴ Cybergeneitics, *Case Packet* – Commonwealth of Pennsylvania v. Lafon Ellis, 1-124 (Dec. 5, 2019).

articles and non-peer-reviewed summaries do not claim conformance with processes described in software engineering standards documents. Consequently, they should not be considered evidence of completing software engineering V&V.” Exhibit 1 ¶ 23. As Mr. Adams points out, “[i]t is appropriate to question which types of materials used for V&V processes do exist for TrueAllele® and how these materials have been or could be used for TrueAllele® V&V efforts. V&V tasks described by IEEE Std 1012-2012 cannot be completed if they do not involve reviews and evaluations of the required input materials, regardless of any peer-review process used.” Exhibit 1 ¶ 24. Noteworthy to the Court, “[m]ost TrueAllele® peer-reviewed articles and many non-peer-reviewed validation summaries include Cybergeneitics personnel as co-authors. If TrueAllele® should be expected to adhere to V&V tasks for integrity level 3 or 4, it is also appropriate to question the degree to which TrueAllele® V&V efforts involved independent personnel, especially V&V efforts involving non-public materials.” Exhibit 1 ¶ 27.

As to the specific need for the source code, Mr. Adams writes, “[s]ource code is a required input of multiple V&V tasks and consequently would be used in a review of TrueAllele® V&V efforts, which should inform us as to the confidence we should place in the outputs of TrueAllele®, including “match statistics” and specificity rates or distributions. The outputs themselves do not possess an inherent ability to prove their own correctness.” *See* Exhibit 1 ¶ 29.

For the reasons set forth above, this Court should not be confident in the government’s assertions that no genuine controversy exists in the “validity and reliability of the TrueAllele method.” Rather than relying on confident assurances from the two parties with the most interest here (the government and Cybergeneitics), “[c]onfidence in these outputs should derive from confidence in the operations executed by TrueAllele®. Confidence in the operation of any software is determined through assessments of its quality as a software system.” Exhibit 1 at ¶ 18.

CONCLUSION

For all the reasons set forth above, Mr. Ellis asks this Court to deny the government's motion to quash the subpoena served to Cybergenetics, to modify the subpoena with the modifications suggested by the defense in this motion, and Order Cybergenetics to comply with the subpoena so that Mr. Ellis's expert can start reviewing the requested materials.

Respectfully Submitted,

/s/ Khasha Attaran

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